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While KÜSTER confirms HABERLANDT'S observations that the nucleus is usually near the tip of the rhizoid in many plants, he finds that in *Hydrocharis morsus-ranae*, and in many other plants of similar habitat, the nucleus is just as constantly at the base of the root hair. The suggestion is made that the position of the nucleus in root hairs may be a result of growth rather than a cause of it, or the position may be due to unknown factors.

In regard to the position of nuclei in the stomatal apparatus, KÜSTER is inclined to believe that the position of the nuclei of the neighboring cells is not related to the development of the guard cells, but rather that the position near the concave wall is due to physical factors which favor or compel this position. In many plants, like *Osmunda regalis*, when the neighboring cells are not crescent-shaped, the nuclei are not situated near the walls.

Although KÜSTER agrees with HABERLANDT that the nucleus is often found at the place where local thickenings of the cell wall are taking place, he also finds other instances where the nucleus is not so situated.

In these three classes of phenomena, KÜSTER regards HABERLANDT'S explanations as teleological. He himself, however, is not able to find a satisfactory explanation for the varying position of nuclei and he believes that the factors which determine it have not yet been discovered.—CHARLES J. CHAMBERLAIN.

Items of taxonomic interest.—J. N. ROSE (Smithson. Quarterly 50:32. 1907) has made additions to his synopsis of the Mexican species of Ribes and has described a new species; has proposed, in connection with J. H. PAINTER (*idem* 33–34), the new generic name *Morkillia* for *Chitonia* Moç. and Sessé (Zygophyllaceae), which is a homonym of *Chitonia* D. Don.; and has described (*idem* 63–64. *pl. 6*) a new Cactus from Guatemala, a species of the Melocactus type, to which he proposes to shift the generic name Cactus.—N. PATOUILLARD (Bull. Soc. Mycol. France 23:50–52. 1907) has described a new genus (*Le Ratia*) of hymenogasters from New Caledonia.—H. HARMS (Bot. Jahrb. 40:15–44. 1907), in his fourth paper on African Leguminosae, has described a new genus, *Englerodendron*.—R. HAMET (Bull. Soc. Bot. France 54:26–38, 52–76. *pl. 2*. 1907) has published a synopsis of the genus Drosera, recognizing 65 species, setting aside 4 as insufficiently known, and excluding 7.—S. BROWN (Torreya 7:125, 126. 1907) has described a new spruce (*Picea albertiana*) from the Canadian Rocky Mts., which had been referred to both *P. canadensis* and *P. mariana*.—A. ZAHLBRUCKNER (Ann. K. K. Naturh. Hofmus. 20:350. 1907), in centuries xii and xiii of his *Kryptogamae exsiccatae*, publishes a new lichen (*Rinodina iowensis*) from granite rocks near Fayette, Iowa.—J. M. C.

Vegetation in Somerset, England.—Following the lead of the late ROBERT SMITH, vegetation maps are multiplying in England. The latest is that of the Bath and Bridgewater district of Somerset, and is the work of C. E. MOSS.[14]

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[14] MOSS, C. E., Geographical distribution of vegetation in Somerset: Bath and Bridgewater District. Publ. Roy. Geog. Soc. London. pp. 71. *figs. 24. colored map.* 1907.

The lowlands area is presented under the following formations: dune, muddy salt marsh, rocky headlands, aquatic, and peat moor. The section given to a consideration of the upland area contains an account of the plant formations of the sandstones, the limestones, the deep marls and clays, and the region of cultivation. The history of the plant formations is traced, it being shown that a plant formation begins as an open or unstable association, passes through intermediate associations, and eventually becomes a closed or stable association. For example, the dune formation in this region begins as an open association, either of strand plants, or of *Agropyron junceum*, or of *Ammophila arundinacea*, and only reaches the intermediate associations of dune pasture plants or of dune marsh plants. The formation of the muddy salt marshes begins as an open association of Salicornia, and, after reaching an intermediate association of halophilous plants, the salt marshes are reclaimed. The author concludes that in a small area, like England, the plant associations are determined much more by edaphic factors than by climatic conditions.—J. M. C.

Toxicity of solutions.—To determine if the fact discovered by NÄGELI, that insoluble solid substances placed in poisonous solutions in which algae are growing reduce the toxicity of the solutions, holds also for fungi, Miss FITCH[15] has investigated the action of insoluble substances upon media in which fungi were grown. Penicillium and Aspergillus were grown in pure cultures in beet decoction, in prune decoction, and in bouillon to which sulfuric acid had been added, making concentrations of $n/4$, $n/8$, $n/16$, $n/32$, $n/64$, and $n/128$. It was found that such substances as glass in different degrees of fineness, sand, and filter paper reduce the degree of toxicity of the poisonous solutions. For example, in cultures of Aspergillus in beet decoction, $n/64$ and $n/128$ H_2SO_4 showed stimulation, while $n/32$ was near the border line of beginning toxicity; but with the addition of glass $n/32$ showed the greatest stimulation of growth of the series, and a concentration as high as $n/16$ still showed marked stimulation. All other experiments showed results of the same nature, thus establishing the fact that the principle of NÄGELI holds in this case, as it has been shown to hold for flowering plants. Such results were to be expected, since the modifying action of the solid substances is exerted on the solution and not on the organisms growing therein.—H. HASSELBRING.

Glycogen and sporulation in yeast.—KOHL[16] finds that glycogen is more abundant in actively budding cells of *Saccharomyces cerevisiae* which he examined than it is in the resting cells. In view of this fact he believes that glycogen is not exclusively a reserve product, but that it represents an intermediate product in the formation of alcohol from sugar. He suggests that glycogen is broken down to glucose and isomaltose, which undergo splitting into alcohol and CO_2 by the action of zymase, and that the hexoses consequently first undergo transformation

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[15] FITCH, RUBY, The action of insoluble substances in modifying the effect of deleterious agents upon the fungi. Ann. Mycol. **4**:313–322. 1906.

[16] KOHL, F. G., Ueber das Glykogen und einige Erscheinungen bei der Sporulation der Hefe. Ber. Deutsch. Bot. Gesells. **25**:74–85. *pl. 1. figs. 2.* 1907.